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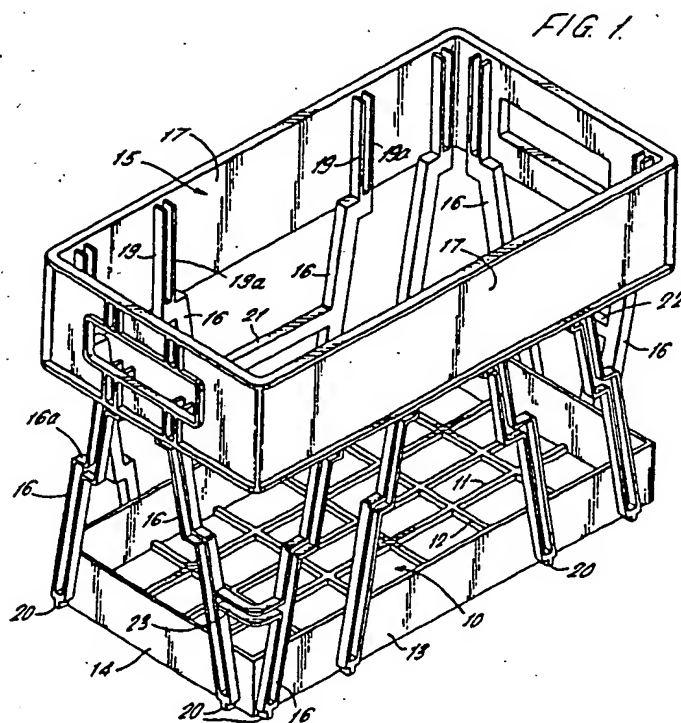
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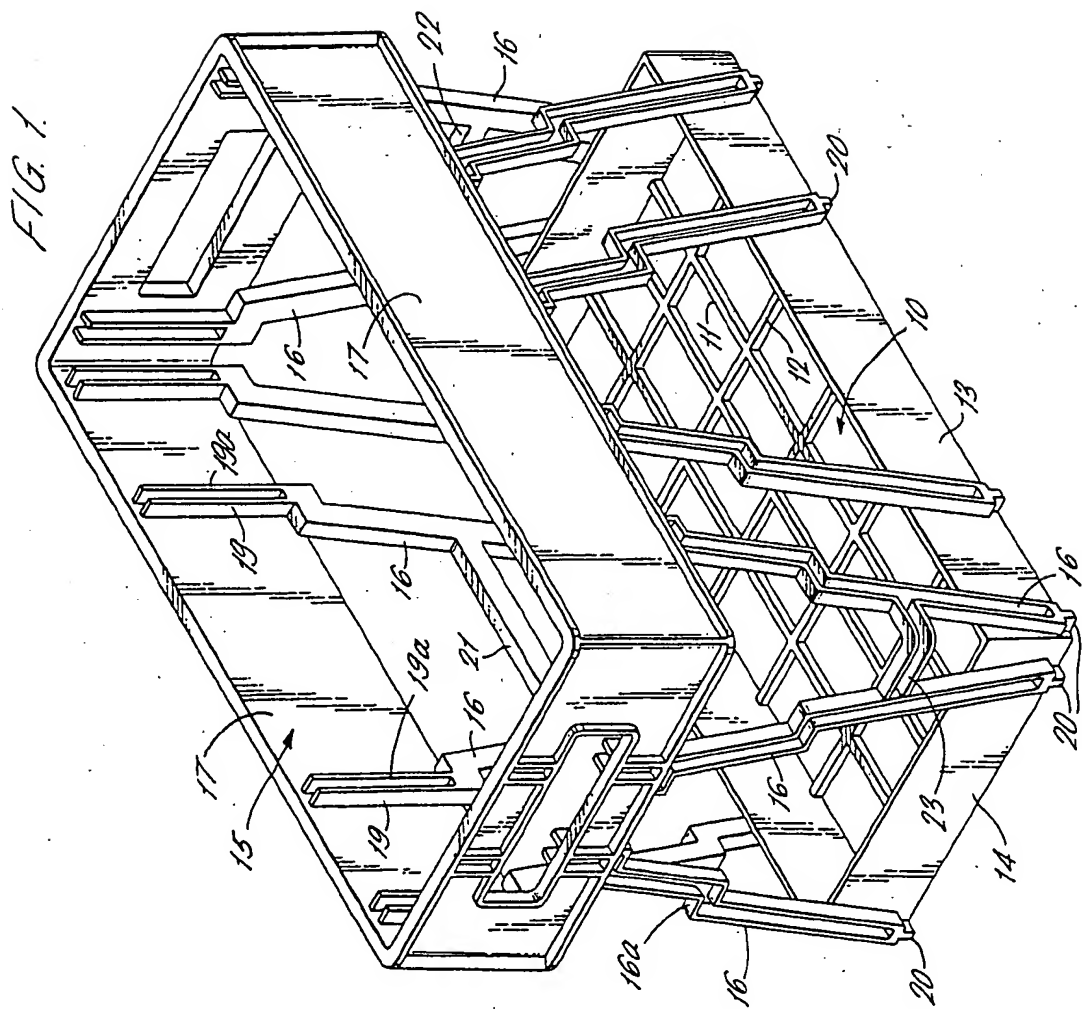
(53) Field of search
B8P

(54) Crates

(57) A crate comprises a rectangular base (10) above which there is a rectangular form girdle (15) supported by legs (16). The legs are attached to the outer side of the base (10) and the inner side of the girdle (15) and on one side of the crate converge towards the girdle (15) and on the opposite side diverge towards the girdle (15) and, likewise, at one end converge towards the girdle (15) and at the other end diverge towards the girdle (15). Thus two similarly orientated crates may be nested one within the other and with the crates reversed end for end, they may be stacked with spigots (20) at the lower ends of the legs of the upper crate engaging in sockets at the upper ends of the legs of the lower crate.



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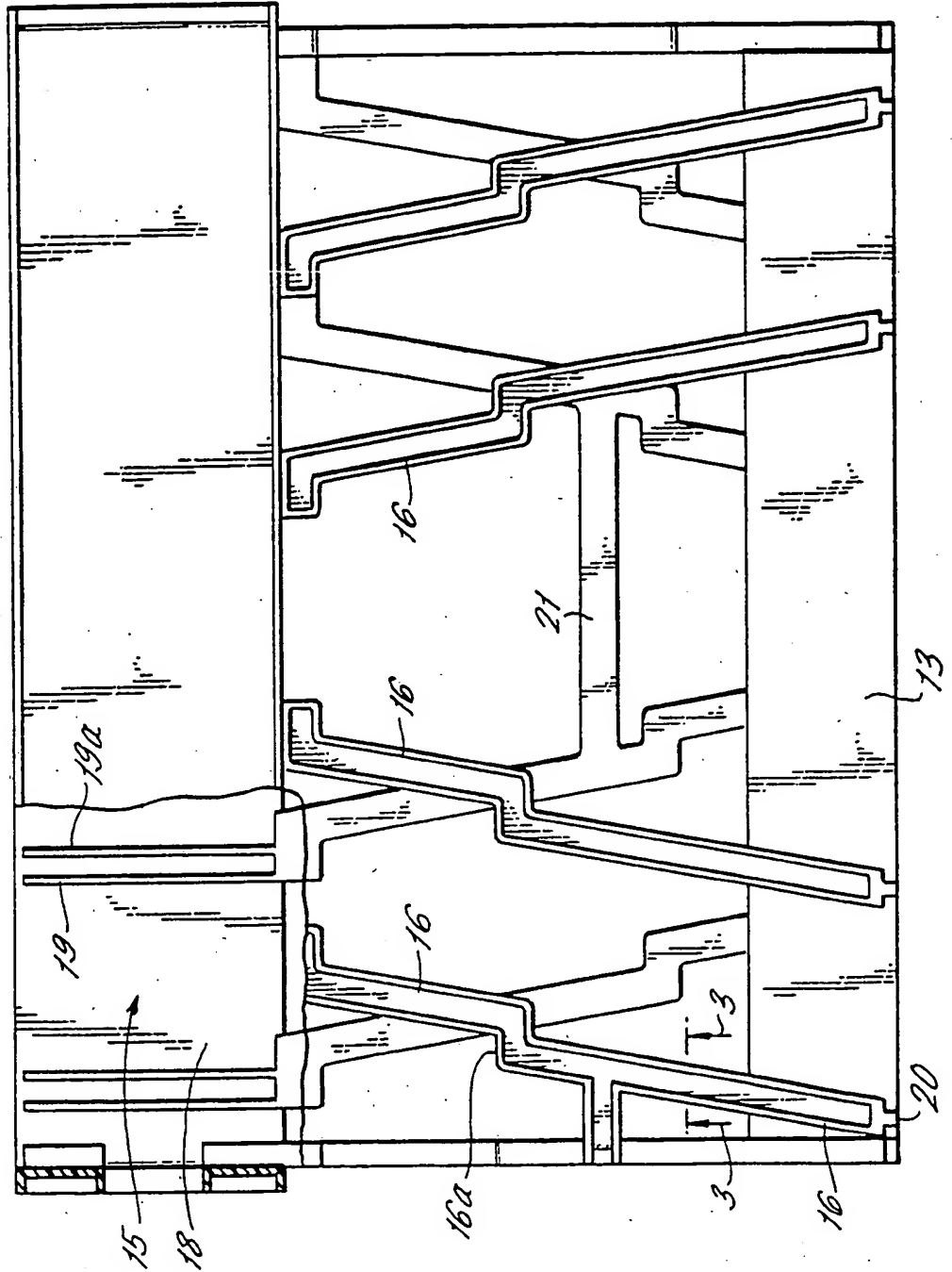
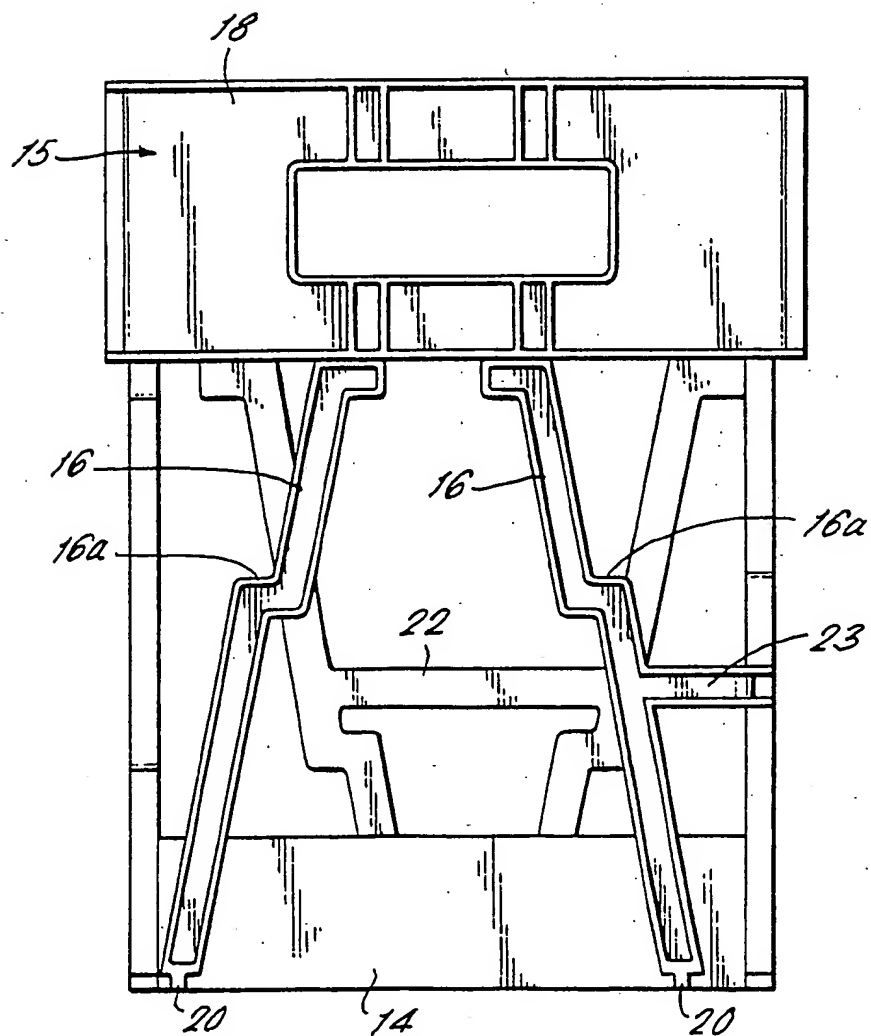


FIG. 2.

FIG. 3.

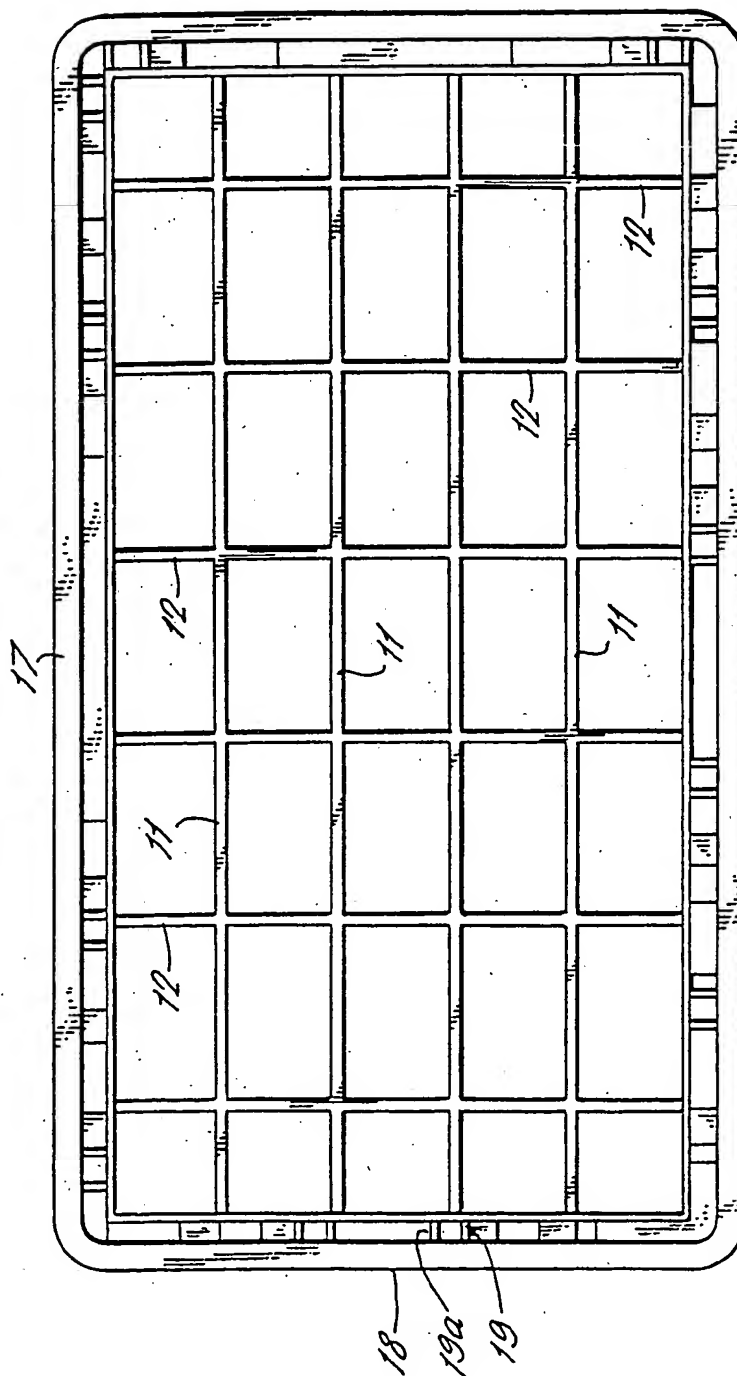


FIG. 4.



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FIG. 5.



SPECIFICATION

Crates

- 5 This invention relates to crates for holding supplies of bottles or like containers or goods, e.g. fruit, vegetables or other items such as manufactured goods.

- The invention provides a crate for holding a plurality of articles such as bottles comprising a rectangular base, a rectangular peripheral girdle the inner length and breadth of which are greater than the corresponding length and breadth of the base and separate legs connecting the outer periphery of the base to the inner periphery of the girdle to support the girdle above the base, each side of the crate having a plurality of legs on either side of a mid-position along the side with the legs on one side of the position converging towards the legs on the other side of the mid-position, the legs on one side of the crate being convergent towards the top of the crate and the legs on the other side of the crate being convergent towards the bottom of the crate and at the ends of the crate, there being a plurality of legs which at one end are convergent towards the top of the crate and at the opposite end towards the bottom of the crate, at least certain pairs of convergent legs being connected by bridging members extending parallel to the base the arrangement being such that two similarly orientated crates will nest together one on top of the other with bridging members between said convergent legs receiving and supporting the lower ends of the corresponding legs of the crate above and, with the upper crate turned end-for-end, the upper crate stacks on the lower crate with the lower ends of the legs of the upper bearing on the upper ends of the legs of the lower crate.

- The following is a description of a specific embodiment of the invention, reference being made to the accompanying drawings in which:

Figure 1 is a perspective view of a crate for bottles, containers or other goods;

- Figure 2* is a part front elevation part sectional view of the crate;

Figure 3 is a section on the line 3-3 on *Fig. 2*;

Figure 4 is an end elevation of the crate; and

- Figure 5* is a plan view of the crate.

- The crate shown in the drawings is formed as a "one piece" injection plastics moulding and comprises a rectangular base indicated generally at 10 made up of a grid of spaced longitudinally and laterally extending members 11 and 12 respectively. Other lattice forms such as arcs or circles or combinations may be adopted for the base instead of the grid form illustrated. The base has shallow upstanding side and end walls 13 and 14

respectively which, together, completely encircle the base.

- An outwardly facing channel section rectangular form girdle indicated generally at 15 is spaced above the base and is supported by legs 16 extending between the peripheral wall of the base and the girdle. The girdle comprises parallel sides 17 connected by parallel ends 18. In the embodiment illustrated the girdle is relatively deep although a shallower girdle may be employed where the design and strength requirements permit. The length and breadth of the girdle exceed that of the base by slightly over twice the thickness of a leg 16 and the legs extend from the outer faces of the side walls 13, 14 encircling the base to the inner faces of the sides and ends of the girdle 15. The crates can thus be nested as described later. Each leg 16 is formed partway between the base and girdle with a dog-leg 16a to increase the strength of the leg and the upper end of each leg within the girdle divides into two parallel upwardly standing walls 19, 19a which stop just short of the top periphery of the girdle. As can be seen in *Figs. 2* and *4*, the bottom end of each leg 16 stops short of the bottom edge of the base and is formed with a downwardly extending spigot 20 of similar width to the spacing of the walls 19 and 19a at the top end of the leg so that the spigot at the bottom of one end of a leg can engage and be located by the walls 19, 19a of the leg of a crate below as described later. The legs 16 are of outwardly facing channel section as shown in *Fig. 3* of the drawings.

- At the ends of the crate illustrated in *Fig. 1*, there are two spaced apart legs, the two legs at one end converging (but not engaging) towards the girdle defining the top of the crate and the legs at the other end converging (but not engaging) towards the base of the crate. Four legs are provided on each side of the crate in two parallel pairs on either side of the midway position along the crate side. The two pairs on one side of the crate converge (but do not engage) towards the top of the crate and the two pairs on the other side converge towards the bottom of the crate. On the latter side of the crate, the central pair of legs 16 are inter-connected by an integral ridge 21 extending parallel to the base and being spaced between the base and the girdle and, similarly, the pair of legs at one end of the crate which converges towards the bottom of the crate are connected by a bridge 22. Finally the pair of legs 16 at that corner of the crate remote from the bridges 21 and 22 are inter-connected by a right-angled bridge 23 spaced between the base and girdle.

- In order to stack the crates according to the design described above one on top of the other, alternate crates are located one above the other reversed end-for-end so that the divergent ends of the legs 16 at the base of

the crate line up with the divergent ends of the legs in the girdle of the crate below and, likewise, the convergent ends of the legs at the base of the crate line up with the convergent ends of the legs at the top of the crate below. The spigot at the bottoms of the ends of the legs register between the parallel walls of the tops of the legs below to locate the legs with respect to each other so that the weight of the crate above is taken by the crate below through its legs. Finally, the superimposed crates are prevented from sliding laterally relatively to one another thus making a stack of the crates more stable, in particular, making it easier and safer to carry a stack of crates. When the crates are empty and it is desired to nest the crates, the crates are located one on top of the other in a similar orientation. The base of the crate below passes through the girdle 15 of the crate above and the divergent ends of the legs 16 receive between them the convergent upper ends of the legs of the crate below. The convergent ends of the legs 16 enter between the convergent legs 16 of the crate below and bear on the cross-members 21 and 22 inter-connecting the convergent legs 16 at one side and one adjacent end of the crate. The remote corner of the crate above bears on the right-angled bridging member 23 at the corresponding remote corner of the crate below so that the crate above is supported on the bridging members 21, 22 and 23.

The crate described above has two inter-connecting legs at each end and four inter-connecting legs along the sides of the crate. It will be appreciated that in larger crates, additional legs similarly orientated will be provided to give the required strength and weight carrying capacity.

The crate associated above combines strength with lightness and provides a saving in the mass of plastic material required over other conventional crate designs of equivalent carrying capacity. Further, the absence of internal partitions in the crate enables the crate to be filled with different types of containers, bottles or different combinations of containers or bottles. For example, one particular size of crate may be used to hold up to twelve 1½ litre bottles or up to eight 2 litre bottles or some of each. More generally the crate can be used for holding other goods such as vegetables, longer size fruit and the like subject only to the base gird being fine enough to prevent the goods from falling through.

The facility for nesting the crates saves space for storing or when transporting empty crates and the "spigot and register" effect between "nested" crates arising from the inter-engagement of the legs of the crates enables the stack height of nested crates to be increased with safety above the safe level for conventional crates.

CLAIMS

1. A crate for holding a plurality of articles such as bottles comprising a rectangular base, a rectangular peripheral girdle the inner length and breadth of which are greater than the corresponding length and breadth of the base and separate legs connecting the outer periphery of the base to the inner periphery of the girdle to support the girdle above the base, each side of the crate having a plurality of legs on either side of a mid-position along the side with the legs on one side of the position converging towards the legs on the other side of the mid-position, the legs on one side of the crate being convergent towards the top of the crate and the legs on the other side of the crate being convergent towards the bottom of the crate and at the ends of the crate, there being a plurality of legs which at one end are convergent towards the top of the crate and at the opposite end towards the bottom of the crate, at least certain pairs of convergent legs being connected by bridging members extending parallel to the base the arrangement being such that two similarly orientated crates will nest together one on top of the other with the bridging members between said convergent legs receiving and supporting the lower ends of the corresponding legs of the crate above and, with the upper crate turned end-for-end, the upper crate stacks on the lower crate with the lower ends of the legs of the upper bearing on the upper ends of the legs of the lower crate.
2. A crate as claimed in claim 1, wherein the convergent legs on one side, an adjacent end and a corner spaced remote from the side and end have said bridging members.
3. A crate as claimed in claim 1 or claim 2, wherein the legs extend vertically up the inner periphery of the girdle adjacent the upper periphery of the girdle.
4. A crate as claimed in any of the preceding claims wherein the upper and lower ends of the legs have inter-engaging sockets and projections to locate an upper crate stacked on a lower crate.
5. A crate as claimed in claim 4 wherein the lower ends of the legs are formed with downwardly extending projections and the upper ends of the legs adjacent the periphery of the girdle have sockets to receive the projections so that superimposed crates are positively located on above the other and cannot slide laterally with respect to each other.
6. A crate as claimed in any of the preceding claims wherein four legs are provided on each side of the crate.
7. A crate as claimed in any of the preceding claims wherein each leg is formed partway between the base and the girdle with a dog-leg to strengthen the leg.
8. A crate as claimed in any of the preceding claims wherein the base is formed with a peripheral wall extending along the sides and

ends thereof and the legs are connected to the outer periphery of the wall.

9. A crate as claimed in any of the preceding claims wherein the base comprises an open lattice structure.

10. A crate as claimed in claims wherein the base comprises an open rectangular lattice of longitudinally and laterally extending members, or circles or arcs on a combination thereof.

11. A crate as substantially as described with reference to and as illustrated in the accompanying drawings.

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